

Plant-Wide Assessment Summary—Forest Products

Industrial Technologies Program — Boosting the productivity and competitiveness of U.S. industry through improvements in energy and environmental performance

\$9.5 Million in Savings Identified through Inland Assessment

Inland Box Corporation and its partners applied a systematic plant-wide assessment (PWA) approach to identify energy- and cost-saving opportunities at the corporation's linerboard mill in Rome, Georgia. The assessment team identified \$9.5 million in potential annual savings.

The Rome plant has two paper machines that produce an average of 2,400 tons per day of linerboard, used as the facing sheet in the construction of corrugated cardboard boxes. The assessment team's comprehensive strategy addressed mill-wide steam and power use, focusing primarily on reduction of steam generated as a by-product and reducing fresh water use. Improvements in efficiencies of the energy production systems were also considered.

The assessment team recommended several projects, including: improving steam utilization and condensate collection systems, optimizing mill water processes to

re-use water, modernizing paper machine lineshaft and fan pump drives, rebuilding pulp washers, replacing paper machine and pulp mill pumps and control valves with new pumps and variable-frequency drives, adding blow boxes to the paper machine, installing a new dryer hood, and rebuilding the broke (discarded paper or board) handling systems. These seven projects are slated for completion between 2001 and 2004.

DOE funded the assessment at \$75,000 and required at least a matching amount from Inland. The table below highlights the overall savings opportunities identified.

Inland Rome Assessment

Cost savings	\$9.5 million/year
Electrical energy savings	21.6 million kWh/year
Natural gas savings	3,000 MMBtu/year

Project Partners

Inland Paperboard and Packaging
Rome, GA

Dean Oliver

ITT Gould

Rockwell International

EPRI

Conduct your own Plant-Wide Assessment

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Respond to annual PWA solicitations:
www.oit.doe.gov

For technical details, visit:

www.oit.doe.gov/bestpractices/factsheets/inlandpaper.pdf
www.oit.doe.gov/bestpractices/case_studies_pwa.shtml

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U.S. Department of Energy

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DOE/GO-102003-1700 • August 2003

Plant-Wide Energy Assessments

Plant-wide energy assessments (PWAs) investigate overall energy use in industrial facilities—energy use can account for 10% or more of an industry's total operating costs. PWAs also highlight opportunities for best energy management practices for industry, including the adoption of new, efficient technologies. The Office of Energy Efficiency and Renewable Energy's Industrial Technologies Program works with companies to identify energy-saving projects that can be replicated in other facilities and industries for multiplied savings. On average, the findings from a single assessment can be replicated multiple times—often ten times or more—at other facilities with equivalent systems and energy use. For a relatively low initial investment, companies that participate in assessments can realize a minimum of \$1 million in savings annually from diminished energy costs, reduced waste, and increased productivity—usually with a payback of less than 18 months. For more information, visit www.oit.doe.gov/bestpractices/assessments.shtml.

The Industrial Technologies Program publishes a case study for each completed PWA. The case studies describe how the companies have conducted plant-wide assessments to achieve energy and cost savings, improve productivity, and reduce environmental impacts. You can help your company replicate these savings by learning about and implementing the cost- and energy-saving projects identified in these case studies. Frequently, projects can be replicated across many industries. Find out which projects could benefit your company! To learn more, visit www.oit.doe.gov/bestpractices/case_studies_pwa.shtml.

Annual Savings Opportunities Identified Through Plant-Wide Energy Assessments

3M	\$1,094,000	Corning	25,920,000
Akzo Nobel	1,170,000	Equilon Enterprises	52,500,000
Alcoa (alumina production)	1,072,000	Ford	3,280,000
Alcoa (aluminum extrusion)	1,974,000	Georgia-Pacific Crossett	9,600,000
AMCAST	3,600,000	Inland Paper	9,500,000
Anchor Glass Container	1,638,000	Metlab	518,000
Appleton Paper	3,459,000	North Star Steel	2,640,000
Bayer	1,478,000	Utica Corporation	1,880,000
Boise Cascade	707,000	Weyerhaeuser Longview	3,100,000
Caraustar	1,280,000	WR Grace	840,000

Additional Assessment Opportunities

Small- to medium-sized manufacturers, with annual energy bills between \$100,000 and \$2 million, may be eligible to receive energy assessments by university-based Industrial Assessment Centers (IAC.) These IAC's are located at 26 universities located throughout the country. Teams of engineering faculty and students from the Centers conduct energy, waste-reduction, and productivity-improvement audits, and then provide recommendations to manufacturers. Manufacturers must meet certain minimum requirements, which include appropriate manufacturing NAICS codes that fall within the energy-use range. Recommendations from industrial assessments have averaged \$55,000 in potential annual savings for each manufacturer. For more information, visit www.oit.doe.gov/iac/.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.